

Arborist Development Guide



CITY OF **FALLS
CHURCH**

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- A: Recommended Trees to Plant in Falls Church
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The Development Process

- Applicant Action:**
1. Fill Out Presubmission Requirements and Site Plan Checklists. Submit with Other Required Fees and Information to Planning Division.
 2. Submit Preliminary Tree Survey.
 3. Site Plan Submission–Tree Preservation Plan; Landscape Plan and Plant Materials Chart



CITY OF **FALLS CHURCH**

Introduction

This guide is designed to inform developers in Falls Church of the procedures they must undertake throughout the development process. It is specifically designed to provide information regarding the requirements to preserve and to provide natural resources during the development process. Trees are long-lived assets and when carefully managed can help add value to a development site. Working around existing trees takes planning and care but will provide up to an increase of 20% in sale prices, as well as benefits to the City of Falls Church's environment. The City of Falls Church views trees as an integral part of the development project, not an obstacle to it. This philosophy is evident in the commitment the City has made by enacting legislation to preserve trees on development sites. Every development project is different and every piece of land in Falls Church is different. Therefore, the process that each developer needs to go through is a unique challenge. This document will remove some of the unanticipated factors in the process and provide a single source for the forms and information necessary to file a successful site plan.

The City Arborist's Involvement in the Site Plan Process

There are several instances where the applicant and the City Arborist will have interaction. It is recommended that the applicant contact the City Arborist prior to submitting the preliminary tree survey and landscape plan, if required. This can decrease the need for resubmissions and save time and money for the applicant. **The City Arborist can be contacted at (703) 248-5183.**

Plan Review—Preliminary tree surveys and landscaping are reviewed by the City Arborist to ensure that they meet the requirements of the City of Falls Church Code Section 35—Trees, Shrubs and Weeds and Section 38—Zoning. The preliminary tree survey is also reviewed by the Tree Commission at its next meeting. Section 35 outlines the tree preservation requirements and Section 38 identifies the requirements for screening and parking lot landscaping. The City Arborist works with the applicant/contract Arborist to determine the tree preservation plan and calculating the number of replacement trees and tree species. The landscape plan is also reviewed for appropriate plant material selection and placement. The applicant will be contacted by the City Arborist if the survey is unacceptable. A resubmission would then be required.

Bonds—Both the Existing Tree Preservation Bond Agreement and Plan and New Landscaping Elements Bond are posted with the City Arborist prior to the signing off on the approved plan. These bond amounts are calculated in conjunction with the City Arborist and administered by him/ her.

Inspections—The City Arborist is responsible for inspecting the site for compliance with both the tree preservation and landscaping plan and their specifications. Prior to the entrance of any equipment to the site, an inspection of the installation of tree protection fencing and required tree work (removals / prunes) is completed by the City Arborist. Plant material stock and planting methods are inspected before planting. The remaining inspections are related to the bond administration - end of construction inspection / approval of installed plant material. Trees that are saved are inspected during the two (2) year bond holding period. The City Arborist will periodically inspect the site through out the expiration of the one (1) year warranty for the new plant materials and may require replacements if any are dead or dying.

CITY OF FALLS CHURCH, VIRGINIA SITE PLAN CHECKLIST REQUIREMENTS

(For use by applicants and/or their agents with first submissions)

The applicant is responsible for reviewing all appropriate City Code sections and contacting staff for clarification as needed. All site plan submissions must be received prior to Noon in order to be logged in on that business day.

Please mark with a check if the item has been completed; mark "N/A" if the item is not applicable; or provide a written explanation next to the item if the requirement cannot be met.

Presubmission Requirements:

- ___ Four (4) copies of preliminary survey documents are required. These documents must provide an accurate survey of existing features on and around the site, including the following, in accordance with Section 38-29(b) of the City Code:
 - ___ A site drawing to scale locating all existing trees on the site measuring at least two inches (2") in diameter at four and one-half feet (4.5') above grade. A chart shall also be provided showing common name, botanical name, size, condition, and life expectancy of each tree. Trees will be identified by an International Society of Arboriculture (ISA) certified arborist.
 - ___ The preliminary survey documents also require a map showing the location of existing buildings, existing and proposed public and private easements, underground facilities, and any floodplain or Chesapeake Bay Preservation Area District, if applicable.

City staff will review preliminary survey documents within ten (10) business days of submission. Shortly after this review is completed, the applicant should schedule a meeting with staff to discuss any impediments to development and a deadline for submission of revised plans will be set, if necessary. Following this process, the applicant must submit an application, fee, completed checklist, and a development site plan. No site plans will be accepted until all preliminary survey requirements under City Code Section 38-29(b) have been met.

General Requirements:

- ___ Site plans involving most development, redevelopment, or general land disturbing activities in any Chesapeake Bay Preservation Act Overlay District are subject to Section 38-42 and Section 38-29(a)(1)e., (2), (d)(32), and (h)(10) of the City Code.
- ___ If the structure is protected under the Historic and Cultural Conservation Overlay District (Section 38-39 of the City Code) a separate application is required for review by the Historic Architectural Review Board (HARB). Contact the Planning Division for information.
- ___ Site plans must be prepared and certified by an engineer, architect, landscape architect, and/or land surveyor authorized to practice in the State of Virginia.

Site Plan Submission Requirements:

Plan Specifications:

- ___ A standard cover sheet (Mylar template is available for loan for reproduction from the Planning Division).
- ___ Standard size of 24" x 36".
- ___ Scale equal to 1" = 50' or larger.
- ___ Title, scale, date, and name of firm preparing plan.
- ___ North arrow, true or magnetic.
- ___ Vicinity map at scale of 1" = 2,000' or greater.
- ___ Source of topographic and boundary survey.
- ___ Boundary of the tract by courses and distances reflecting true meridian and/or scaled coordinates, in accordance with National Geodetic Survey standards, including the area of the site. Provide benchmark and description from which information was obtained. Provide reference to Virginia State Plane Coordinates.
- ___ Use classifications and type of construction of buildings for fire rating purposes.
- ___ One 8-1/2 x 11" reduction of the development plan, with supporting graphics.

Legal Specifications:

- ___ Seal and signature of preparing engineering, architect or land surveyor.
- ___ Name of record owner, zoning designation(s), and present use(s) of the subject site.
- ___ Name of owner(s), zoning designation(s), and present use(s) of all adjacent properties.
- ___ A statement that the owner/contract owner joins in the site plan and agrees to be bound by all plan requirements. If any person represents the owner, the owner must provide a statement of the person's authority.
- ___ Subdivision plat or dedication plat, when applicable. If a site plan covers more than one parcel, a subdivision plat which binds the properties to the uses shown on the site plan is also required. Plat approval and recordation is a condition for site plan approval.

Roads, Parking, and Utilities:

- ___ Existing pavement widths, Comprehensive Plan (Major Thoroughfare element), and right-of-way widths of public streets adjoining the tract. This should include right-of-way and pavement widths.
- ___ Widths of proposed public streets (right-of-way and pavement). A minimum of a 50 foot right-of-way and a 30 foot curb to curb is required for public streets.
- ___ The use of private streets is discouraged, however, if a private street is approved by the Planning Commission, the applicant must state clearly that the street or drive is private and is to be privately maintained, and that no City refuse collection, recycling collection, snow plowing, or maintenance will be provided. Easements for public street maintenance will not be accepted. Public maintenance and other services are provided only on public streets.

- ___ Location of existing and proposed edge of pavement or curbs and gutter and curb cuts.
 - ___ Location of existing and proposed easements, both public and private, and underground facilities. Include deed book and page information for existing easements.
 - ___ A schedule showing compliance with the off-street parking and loading requirements of Section 38-31 of the City Code, based on usage, the square footage of that use, and the ratio of parking spaces to floor area for the use.
 - ___ The location and dimensions, vertical clearance, and the surface type of off-street parking, loading, and standing spaces and aisles for provided spaces, in accordance with Section 38-31 of the City Code.
 - ___ The location and dimensions of bicycle storage areas.
 - ___ Location of existing and proposed utility poles, fire hydrants, retaining walls, pump islands, signs, doorways, window wells, guy wires, or other structures in relation to automobile parking or maneuvering of pedestrian traffic.
 - ___ Travel lanes for fire-fighting equipment designated as “Fire Lane” by the Fire Official where necessary to prevent obstruction by unattended vehicles; a minimum width of 16 feet clear is required.
 - ___ Location, type, and size of vehicular entrances and driveways.
 - ___ Location and width of existing and proposed sidewalks and other pedestrian and nonvehicular access, including handicap access per ADA requirements.
 - ___ Existing and proposed sanitary sewer facilities, indicating pipe sizes, types, and grades, and where a connection is made to the City system, including all calculations.
 - ___ All artificial outdoor light sources and accompanying structural supports, indicating all details required by Chapter 23 of the City Code. Provide a full lighting plan showing photometrics and catalog cuts for fixtures.
- Note: 1) Spillover seven feet (7') past the property line to be 0.1 to 1.0 foot candles (fc);
- 2) Average intensity in parking areas to be 10 fc maximum; and
- 3) No glare onto adjacent property or street is permitted.
- ___ Location of trash storage area and type of enclosures and screening.
 - ___ Location of existing and proposed utility apparatus associated with above ground and underground installation, connection, and distribution as approved by the respective utility corporation.

Landscape/Tree Preservation:

- ___ Landscape plan in conformance with Chapter 35; Section 38-29; and Section 38-31(b)(11) of the Falls Church City Code.
- The landscape plan must include:
- 1) Five percent (5%) interior parking lot landscaping of the entire parking lot area [Section 38-31(b)(11)f. of the Falls Church City Code]. It is recommended that an overlay be provided showing how the five percent requirement was calculated, based on the City’s methodology.
 - 2) A ten foot (10') perimeter buffer adjacent to public streets [Section 38-31(b)(11)d. of the Falls Church City Code];

- 3) Perimeter landscaping to abutting properties [See Section 38-31(b)(11)e. of the Falls Church City Code for width requirements based on zoning];
- 4) Graphic depiction of existing trees to be saved on or in close proximity to the site. List of trees "to be removed" and "to be saved" should be included with the preliminary survey information.
- 5) Topography, existing and proposed.
- 6) All utilities, existing and proposed, to include the lighting plan.
- 7) Plant list showing quantities, common name, botanical name, size, comments, and spacing.
- 8) Landscape specifications, planting details, and maintenance specifications.

___ A revised tree survey based on the comments on the preliminary tree survey. This must include the following:

- 1) The location and specifications of six foot (6') chain link tree fencing (see Arborist for other specifications).
- 2) A graphic depiction and list of trees to be saved and trees to be removed.
- 3) Tree care recommendations. The list of trees to be saved and removed and tree care recommendations shall also be shown in table format.

Physical Features:

- ___ Location of existing and proposed buildings and their dimensions.
- ___ Floor area and use of existing and proposed buildings.
- ___ Height of buildings in feet and number of floors.
- ___ Location, if applicable, of any 100 year floodplain district (Section 38-38 of the Falls Church City Code). This must include the boundary and floodplain zone.
- ___ Location, if applicable, of any Chesapeake Bay preservation area and water quality impact assessment (Section 38-42 of the Falls Church City Code).
- ___ Location, type, and height of existing and proposed fences and walls.
- ___ Existing and proposed topography at an interval not greater than two feet (2'), indicating area of major grading and slopes to be maintained.
- ___ Erosion and sediment control plan in accordance with the most recent edition of the Virginia Sediment Control Handbook.
- ___ Existing and proposed storm drainage system with applicable computations.
- ___ Stormwater detention systems, indicating pipe sizes, types, and grades, including all calculations, and in accordance with the Fairfax County Public Facilities Manual, to include BMPs.
- ___ Building elevations to scale, showing all sides of buildings, building materials, opening details, roofing materials, dimensions, and other miscellaneous architectural features.
- ___ Siamese connection, if building is sprinklered.

Submission Package:

- ___ Completed application form for each type of plan review (i.e., site plan, subdivision, rezoning).
- ___ A check, made payable to the City of Falls Church, for each application fee.
- ___ Ten (10) folded copies of the complete site plan package for staff review. Complete site plan packages include sets of plan sheets - City's cover sheet, site plan, landscape plan, elevations, etc.
- ___ An additional ten (10) folded copies of the site plan package for Planning Commission public hearing.
- ___ Identify all variances to the Zoning Code and landscape or other waivers associated with the site plan.

NOTE: Separate submissions of portions of plans for the same project from different professionals (i.e., engineer and architect) will not be processed.

The applicant or agent hereby certifies that all checklist items have been provided or addressed:

Print Name of Applicant: _____ Telephone Number: _____

Address: _____ Fax Number: _____

Signature: _____ Date: _____

(Professional Seal)

=====

All submissions are to be received by:

City of Falls Church
Department of Planning
300 Park Avenue
Falls Church, VA 22046
703.248.5040

=====

Administrative Use Only

Submission Package: _____ Complete _____ Incomplete _____ Date

Comments: _____

Resubmission Package:

All graphic revisions to site plans must be highlighted and numbered in red on each copy of the revised plan(s). A letter outlining the manner in which all staff and board/commission recommendations have been addressed must also be submitted. Each recommended change should be numbered to correspond with those highlighted on the revised plan. In the event that the applicant cannot address a recommendation, a detailed explanation should also be included in this letter.

- ___ Eight (8) folded highlighted copies of the revised site plan package for staff review.
- ___ An additional ten (10) folded copies of the revised site plan package for Planning Commission public hearing.
- ___ Letter explaining how staff and board/commission comments have been addressed.
- ___ A written justification statement is recommended for any requested waiver by the Planning Commission related to landscaping, off-street parking requirements, etc.
- ___ Contact the Zoning Administrator, 703-248-5015, for Board of Zoning Appeals scheduling requirements if variances are required. A written justification statement of “hardship” is recommended for any requested variance, based on Section 38-10(f) of the Falls Church City Code.
- ___ Contact the Senior Zoning Inspector, 703-248-5015, for Architectural Advisory Board (AAB) scheduling requirements. All site plans must be scheduled for AAB review and a recommendation made by the Board to the Planning Commission or the Planning Director (administrative review).

Tree Preservation Requirements

Expanded from Site Plan Check List Landscape/Tree Preservation (pg. 2)

1. **Tree Survey**—A plan that includes the locations of all existing trees on the site measuring at least two (2) inches in diameter at four and one-half (4.5) feet above grade. A chart must indicate the name of the tree(s), common and botanical(s), size, condition, maintenance needs and intentions for tree under proposed plan (see example “Tree Survey”). A clear indication must be made on the plan regarding which trees are to be removed (TBR), along with those “to be saved”. An International Society of Arboriculture (ISA) certified arborist must prepare the tree survey (see attached list of Tree Contractors) whose certification number must appear along with his/her signature on the plan.

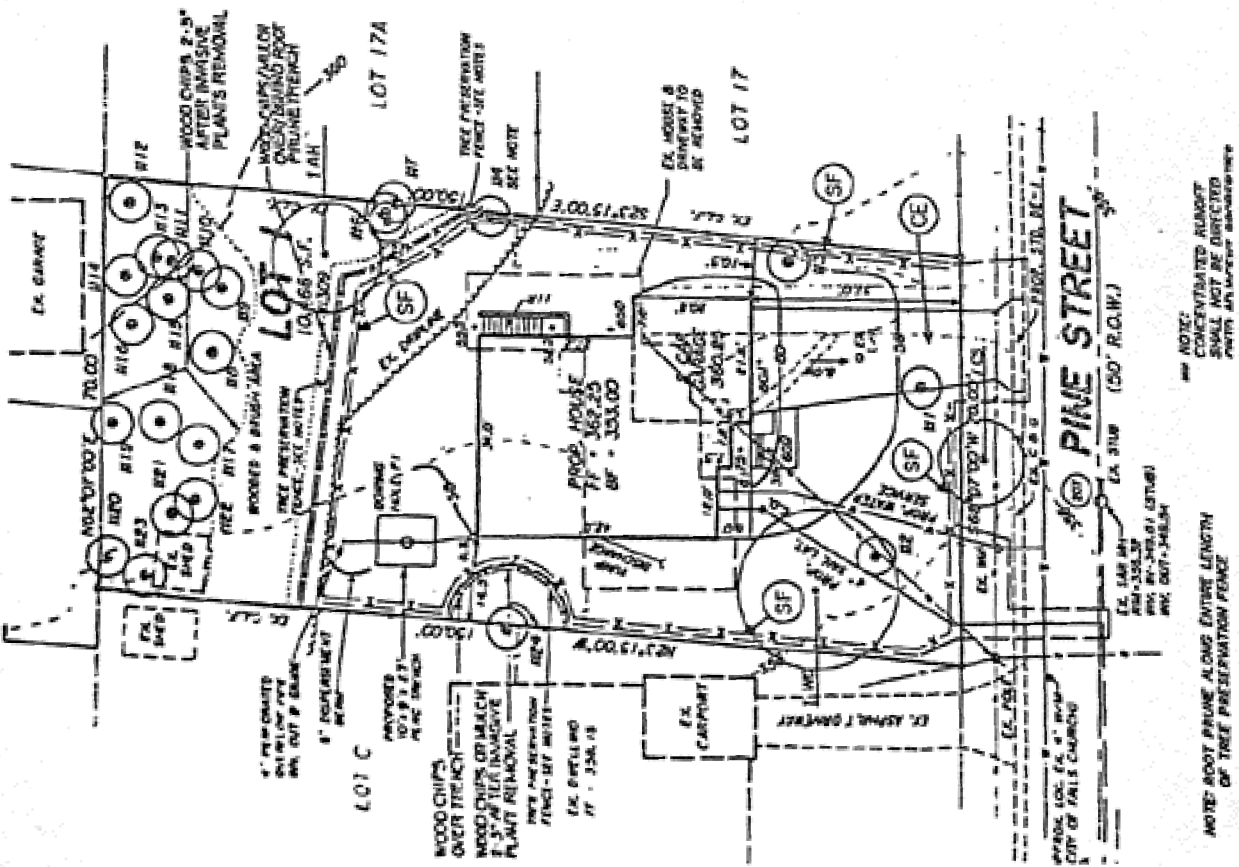
This document is a required preliminary document that illustrates the existing conditions before the development of the site. It is required prior to plan submission for the review of the City Arborist and the Tree Commission. The survey is designed to provide the Arborist with the information necessary to decide the impact from the proposed development to existing trees on the site. The requirements that follow are submitted with the first review of the site plan in consultation with the City Arborist and the project's contract Arborist. Plan review is more efficient when both Arborists discuss tree preservation options and requirements prior to plan submission.

Example Preliminary Tree Survey

Tree #	Common/Botanical Name	Size (DBH)	Condition	Maintenance	Plan - To Be Saved or Removed
1	Willow Oak/ <i>Quercus phellos</i>	35"	Good	Prune dead wood	To be saved*
2	Bradford Pear/ <i>Pyrus calleryana</i>	10"	Fair		Remove non-desirable species, short lived
3	Silver Maple/ <i>Acer saccharinum</i>	42"	Poor		Remove—in building envelope
4	American Elm/ <i>Ulmus americana</i>	28"	Good	Crown clean 2">	To be Saved*

2. **Tree Preservation Plan (example page 10)** that illustrates locations for tree protection fencing and root pruning, including protection measures to be established for off-site trees. These locations shall be determined with the applicant's contract Arborist in consultation with the City Arborist.
3. **Locations of any additional tree preservation measures** such as areas of 10-16" of wood chips used to minimize compaction in areas where construction traffic over tree roots cannot be avoided.
4. **Plant Materials List** includes species, location(s) and size(s) of all new/replacement trees. An evaluation of potential tree loss will be made prior to removals to determine appropriate replacement trees in terms of numbers and species. To assist in the evaluation, the **Tree Replacement Formula** shall be used. The kind, location, and size of the plant material will be made in consultation with the City Arborist from the **Recommended Trees to Plant in Falls Church**.
5. Details to be included on plan: **Arborist Notification, Tree Preservation Procedures and Specifications, Tree Planting Detail, Tree Planting Specifications, and Landscape Maintenance Guidelines.**

Example Tree Preservation Plan



LANDSCAPE LEGEND

KEY	COMMON NAME	BOTANICAL NAME	QUANTITY	SIZE	COMMENTS
WO	WILLOW OAK	QUERCUS PHellos	1	2-2.5'	B&B, STRONG CENTRAL LEADER
AH	AMERICAN HOLLY	ILEX OPACA (FEMALE)	1	5-6' Height	SINGLE-STEM & FULL-FORM
*CS	CAROLINA SILVERBELL	HALESIA CAROLINA	1	2-2.5'	B&B, SINGLE-STEM SPECIMEN

Details to be Included on Plan:

- Arborist Notification
- Tree Preservation Procedures and Specifications
- Tree Planting Detail
- Tree Planting Specifications
- Other Tree Preservation Details as Required

Tree Replacement Formula

Trees are routinely lost during the development process. This formula shall aid in determining the appropriate number(s) of trees to be replaced for those being removed to maintain or to increase the urban forest canopy in the City of Falls Church. This formula is consistent with industry standards and should only be used by qualified individuals, i.e. professional Arborists, with the knowledge of tree condition determinations and species factors.

Definitions

Diameter: Trunk diameter at four and one half feet above the ground.

Species Rating: All tree species are given a value from 1 to 100 which is expressed as a percentage of 100 (ex. 40=40%=.4). These values can be found in the Mid-Atlantic Tree Species Rating Guide, published by the Mid-Atlantic Chapter of the International Society of Arboriculture (1997).

Condition: Rating from 0 (dead) to 100% (perfect) and is expressed as a percentage. Guidelines for this can be found in the Council of Tree and Landscape Appraisers-Guide for Plant Appraisal (9th edition), published by the International Society of Arboriculture (2000).

Procedure

1. Replacement Trees = Diameter (DBH) X Species (%) X Condition (%)
2. All trees that are less than or equal to ten inches (10") DBH are replaced on a one to one ratio.
3. Trees that are evaluated as "high risk" and/or invasive (white mulberry, tree-of-heaven) do not require replacement trees but must be promptly removed from the site.

Application to Replacement Policy

Trees are replaced at the following rates, based on the overall scores:

Rating	# of Tree(s)
1 - 4.9	1
5 - 9.9	2
10 - 14.9	3
15 - 19.9	4

Example: Tree Replacement Chart					
Species	DBH	Condition	Rating	Score	Replacements
American holly	10"			See 2 above	1
Silver maple	40"	.60	.40	9.6	2
White oak	36"	.70	.80	20.16	5
Tree-of-Heaven	15"			See 3 above	N/A
Total Tree Replacement(s) = 8					

20 - 24.5	5
25+	6

Replacement Tree Selection

The species of the trees shall be chosen from the **Recommended Trees to Plant in the City of**

Falls Church, (Appendix A). Other species may be used with the approval of the City Arborist.

New Landscaping Elements Requirements

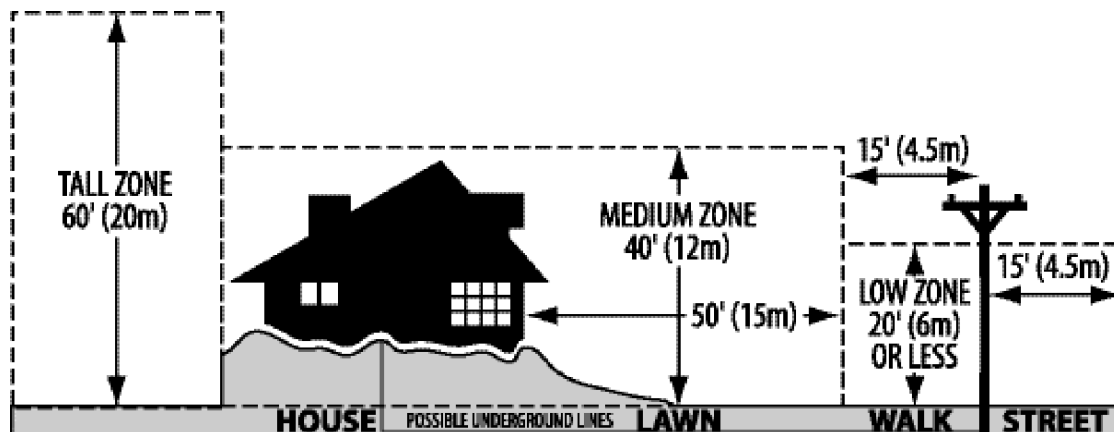
Expanded from Site Plan Check List Landscape / Tree Preservation (pg. 2)

Example-Plant Materials List					
Quantity	Key	Common Name	Size	Comments	Spacing
3	JV	Virginia cedar <i>Juniperus virginiana</i>	6' Minimum	B&B/fully branched	7' on center
4	WO	Willow oak <i>Quercus phellos</i>	2 1/2-3" caliper	B&B/full crown/single lead	30-35' on center
5	VR	Leatherleaf viburnum <i>Viburnum X rhytidophyllum</i>	3-4' minimum	B&B	5' on center
18	EP	Purple coneflower <i>Echinacea purpurea</i>	1 gal	B&B	18" on center

1. Landscape Legend/Plant Material List shall include quantities, common name, botanical name, size, comments and spacing.
2. Details to be included on plan: **Arborist Notification, Planting Specifications, Tree Planting Detail, Shrub Planting Detail, and Landscape Maintenance Guidelines.**
3. Existing healthy plant material (shrubs) may also require protection. Any plant material, shrubs, perennials etc. that are being removed shall be so designated.

Plant Material Guidelines

- The minimum caliper size of all trees shall be 2 - 2 1/2".
- The minimum size of shrubs shall be 24 - 36" at the time of planting.
- The locations, dimensions, and spacing of required plantings shall be adequate for their proper growth and maintenance, taking into account the sizes of such plantings at maturity and their present and future environmental requirements, such as wind, soil, moisture and sunlight.
- The tree species shall be chosen so that they are appropriate for the site conditions.



Fees and Bonding Information

- Applicant Action:**
1. Fill Out Required Documents and Submit to City Arborist.
 2. Post Bond Management Fee.
 3. Submit Tree Preservation Bond Agreement and Plan
 4. Submit New Landscape Elements Bond Agreement and Plan



CITY OF **FALLS CHURCH**

Calculating the Types and Amounts of Bonds

There are three (3) instances when the applicant submits funds to the City; Application for Bond Management, Existing Tree Preservation Bond, and New Landscape Elements Bond. All bonds are required prior to the signature and approval of the final site plan. The following fees and bonds have been established by ordinance of the City Council. Checks are to be made payable to the City of Falls Church and can be paid at the City Treasurer's Office at City Hall in the east wing. The first \$2,000 of the bond is posted in cash to the City and remaining amount in acceptable bond. Information and forms have been included to aid in the acceptable methods of posting the bonds.

1. The **Application for Bond Management** form must be completed and submitted together with the one hundred and fifty dollar (\$150.00) bond administration fee.
2. The **Tree Preservation Bond Agreement and Plan** is intended to ensure that in the worst-case scenario, funding will be available to treat, prune, remove and replace all existing and subsequently destroyed and /or damaged trees impacted by the development if the Tree Preservation Plan was not adhered to through out the construction phase.

Unfortunately, it is not uncommon, for trees that were "to be saved" to be damaged and/or destroyed. This leaves the site with "high risk" trees that are in need of additional tree work. If the developer fails to complete the tree work, then the City can draw on these funds to cover the costs of tree work and tree replacements.

The Existing Tree Preservation Bond Work Sheet is used to help establish the amount of the bond. On this sheet each cost is itemized in relation to estimated cost of removal, adequate tree replacement(s), tree preservation materials, and any additional tree work required.

Section 35-15 (Procedure for Administration of Bond and Terms of Bond) explains how the bond is released. Generally, one-half of the bond is released at the end of

construction after inspection by the City Arborist. The applicant must call the City Arborist to schedule this inspection. It is from this date of satisfactory inspection that the remaining part of the bond is held for two (2) years.

Although the bond is made up of amounts attributed to specific trees, the bond amount is for the site as a whole and cannot be released in any other manner that is not in accordance with Section 35-15.

3. The **New Landscape Elements Bond Agreement and Plan** is established to insure the installation and planting of all plant material shown on the plan for landscaping. The bond amount is established by the total replacement cost of all the plant material. The replacement cost includes the price of the plant material and the additional costs to transport, install, maintain, and guarantee the required plants. This amount is determined by the applicant by submitting a detailed cost estimate of the plant material. This estimate can be attained from a local nursery or a landscape subcontractor. The amount is then multiplied by two and one-half to get the total bond amount.

Section 38-29 (Bond for Landscape Elements) explains how the bond is released. Generally, once the landscaping has been installed, inspected / approved by the City Arborist, it is one (1) year from this date of satisfactory inspection that the bond is held. The applicant must call the City Arborist to schedule the final inspection and subsequent release of the bond. If there are no required repairs or replacements, the bond is released.

Application Number _____

Inspection Date _____

CITY OF FALLS CHURCH, VIRGINIA
APPLICATION FOR BOND MANAGEMENT, REDUCTION OR
INSPECTION FOR EXISTING TREE PRESERVATION
AND/OR NEW LANDSCAPING BOND CONTRACTS

PROPERTY ADDRESS: _____ Date _____

APPLICANT:

Company Name/Contact Person _____

Address _____

Phone Number _____ FAX Number _____

LANDSCAPE AND/OR CITY LICENSED TREE COMPANY REPRESENTATIVE:

(Contractor that did work. Skip if contractor pending)

Company Name/Contact Person _____

Address _____

Phone Number _____ FAX Number _____

Note: Your contractor should be available to meet the City Arborist on-site for any inspections.

TYPE OF BOND TRANSACTION REQUEST: (Check all that apply, fees apply to endnotes * & **)

Tree Preservation: ☐ Posting* ☐ Inspection ☐ Start 2 yr.Term & 1/3 Reduction** ☐ Release

New Landscaping: ☐ Posting* ☐ Inspection ☐ Start 1 yr.Term ☐ Part Reduction** ☐ Release

(Check all that apply)

☐ **Existing Tree Preservation Bond**

☐ **New Landscaping Bond**

(If applicable)

Original Amount of Bond: \$ _____

Original Amount of Bond: \$ _____

Date Bond Posted: _____

Date Bond Posted: _____

FEES REQUIRED: (Apply to each type of bond separately)

Management Fee* \$ 150 (Paid at the time the bond is posted) _____

Reduction Fees** \$ 150 (Less than \$12,000 in bonded amount) **or** _____

(Any form of partial reduction of bond) \$ 400 (\$12,000 or more in bonded amount) _____

TOTAL FEE \$ _____

Applicant's Signature _____

Accepted by: _____

Fees are established by ordinance of the City Council and are due at time of filing, payable at the City Treasurer's Office. Please make checks payable to: City of Falls Church.

Work Sheet

Existing Tree Preservation Bond

See Falls Church City Code Chapter 35.

Name and Address of Owner/Developer:

Name and Location of Development:

Trees to be Saved as Identified in the Approved Plan:

1. <hr/>	11. <hr/>
2. <hr/>	12. <hr/>
3. <hr/>	13. <hr/>
4. <hr/>	14. <hr/>
5. <hr/>	15. <hr/>
6. <hr/>	16. <hr/>
7. <hr/>	17. <hr/>
8. <hr/>	18. <hr/>
9. <hr/>	19. <hr/>
10. <hr/>	20. <hr/>

Replacement Trees:	Size	Unit Costs	Total Costs
1. <hr/>			
2. <hr/>			
3. <hr/>			
4. <hr/>			
5. <hr/>			
6. <hr/>			
7. <hr/>			
8. <hr/>			
9. <hr/>			
10. <hr/>			

Total Costs

Temporary Chain Link Fencing \$2.15 Per Linear Foot

Fertilizing

Pruning

Removal

Other (control of disease or insect problems)

Total Bond Amount

Work Sheet

Existing Tree Preservation Bond

See Falls Church City Code Chapter 35.

Name and Address of Owner/Developer:

John Smith, Inc.

123 Main Street

Falls Church, VA 22046

Name and Location of Development:

John's Music Store

150 Singsong Drive

Falls Church, VA 22046

Trees to be Saved as Identified in the Approved Plan: *See Tree Survey for Locations*

* Bond amount determined by the Mid-Atlantic Tree Species Rating Guide

1.	<u>#1 - 24" white oak \$1,010.00</u>	11.	<u></u>
2.	<u>#8 - 18" red maple \$1,010.00</u>	12.	<u></u>
3.	<u>#11 - 36" willow oak \$1,010.00</u>	13.	<u></u>
4.	<u></u>	14.	<u></u>
5.	<u></u>	15.	<u></u>
6.	<u></u>	16.	<u></u>
7.	<u></u>	17.	<u></u>
8.	<u></u>	18.	<u></u>
9.	<u></u>	19.	<u></u>
10.	<u></u>	20.	<u></u>

Replacement Trees:	Size	Unit Costs	Total Costs
1. <u>black gum</u>	<u>2 1/2 - 3"</u>	<u>\$150.00 x 2.5</u>	<u>\$375.00</u>
2. <u>willow oak</u>	<u>2 1/2 - 3"</u>	<u>\$120.00 x 2.5</u>	<u>\$300.00</u>
3. <u>"Red Sunset" maple</u>	<u>2 1/2 - 3"</u>	<u>\$105.00 x 2.5</u>	<u>\$262.50</u>
4. <u>Eastern red cedar</u>	<u>2 1/2 - 3"</u>	<u>\$100.00 x 2.5</u>	<u>\$250.00</u>
5. <u></u>	<u></u>	<u></u>	<u></u>
6. <u></u>	<u></u>	<u></u>	<u></u>
7. <u></u>	<u></u>	<u></u>	<u></u>
8. <u></u>	<u></u>	<u></u>	<u></u>
9. <u></u>	<u></u>	<u></u>	<u></u>
10. <u></u>	<u></u>	<u></u>	<u></u>

Total Costs \$4,217.50

Temporary Chain Link Fencing \$2.15 Per Linear Foot 215.00

Fertilizing

Pruning

Removal

Other (control of disease or insect problems)

Total Bond Amount **\$4,432.50**

CITY OF FALLS CHURCH, VIRGINIA
EXISTING TREE PRESERVATION BOND AGREEMENT AND PLAN

BOND AGREEMENT: In return for the approval of the development's plans for

(Development Name)

Developer and/or Contractor of _____, does hereby agree to perform all
(Developer's and/or Contractor's Name)

required preservation measures as required by the Falls Church City Code, Chapter 35, and as they are specified in this Agreement by _____. To insure that these measures are performed, a bond
(date)
in the amount of _____ shall be posted with the City prior to the issuance of the required permits. The bond is to be held in escrow by the City according to the terms of City Code Section 35-15 and until the conditions stated in Section 35-15(b) are completed (See Preservation Measures on Plan). If the Developer and/or Contractor fails or refuses to comply with the terms of this Agreement and the City brings suit against either or both to enforce said terms, the Developer and/or Contractor shall be jointly and severally liable to the City for reasonable attorney's fees, not to exceed twenty percent (20%) of the principal amount claimed, plus its costs incurred.

Tree List and Other Comments:

(Developer's and/or Contractor's Name)

Date

(City of Falls Church)

Date

Ordinance Pertaining to Bonding of Existing Trees

§ 35-15 FALLS CHURCH CITY CODE

Sec. 35-15. Tree preservation and maintenance agreement and bond.

(a) *Purpose and amount of bond.* Prior to approval of the plan required by this article and prior to the issuance of building and development permits there shall be executed by the owner or his agent and submitted with the plans an agreement to establish the measures provided for on the plans for the protection of existing trees, together with a cash bond, to be deposited in an interest bearing escrow account upon which the city may draw, in accordance with the agreement, in an amount equal to the total replacement cost of the protected trees plus the cost of the measures required by the agreement for the protection of the trees. Deposit of such funds shall be in a qualified security or insured savings account and any interest earned shall be credited to the owner or agent. The agreement and bond shall be provided for the installation, maintenance and performance of these protective measures and to insure the repair and replacement, if necessary, of the protected existing trees.

(1) *Time, amount of bond fixed, and standard for fixing amount.* The replacement cost of the protected trees shall be fixed at the time the agreement is executed and shall be based upon the most recent Guide for Establishing Values of Trees and Other Plants prepared by the Council of Tree and Landscape Appraisers. In fixing the replacement cost of any existing tree, the city shall use the cost of a specimen tree of similar kind which is available from a nursery in the region and which is closest in trunk diameter to the existing tree. The replacement cost shall include the nursery's cost to install and guarantee the replacement tree for one year. The cost of the measures required for the protection of the trees shall also be fixed as of the time the agreement is executed and shall be based upon the standards for protective measures as set out in the most recent Virginia Erosion and Sediment Control Handbook ("Handbook"), prepared by the Virginia Soil and Water Conservation Commission. (Chapter 3, STD & SPEC 1.85). Protective measures may include those items set out in the Handbook, as well as fertilization, disease and insect treatments and pruning.

(2) *Other forms of security allowed.* In the event the amount of the bond is fixed in excess of two thousand dollars (\$2,000.00), a surety bond, letter of credit, certified check or other similar forms may be provided in lieu of cash bond for the amount in excess of two thousand dollars (\$2,000.00) if the particular form is approved by the city attorney.

(b) *Procedure for administration of bond and term of bond.* The agreement and the plan shall describe the kind of measures to be taken and the materials to be used to protect the trees from the stress of construction. The owner or his agent shall notify the city arborist in writing at least three (3) days prior to the installation of the protective measures. The arborist shall then inspect the measures after they are installed to insure that they meet the requirements set out in the agreement. The arborist shall notify the owner or his agent in writing when the inspection is complete as to whether or not compliance has been achieved. No construction activities, which include, but are not limited to, the placement of heavy equipment on the site, excavations, earth movement, or erection of any structures, shall be done by the owner or his agent until the arborist has determined that the measures have been installed according to the agreement. These measures shall remain in place and shall not be modified until all construction on the real estate covered by the agreement is completed. The arborist shall inspect the area for compliance from time to time. The agreement may be amended only by a written instrument and only upon the consent of the arborist.

The owner or his agent shall notify the arborist in writing when all construction on the real estate covered by the agreement is completed. The arborist shall then inspect the area and, upon determining that all construction in that area is completed, the arborist shall notify the owner or his agent in writing that the protective measures may be removed. No additional construction shall take place on the real estate subject to the agreement after the protective measures have been removed unless the

written approval of the arborist is obtained. Approval shall be given upon a determination that the construction will not damage the protected trees. The arborist shall also inspect the trees at this time to determine what damage, if any, has been caused by the "stress of construction" as that term is defined in the Handbook in the subsection entitled "Stresses of Construction." The arborist shall also notify the owner or his agent in writing if any trees must be repaired or replaced because of damage caused by the stress of the construction or shall refund half of the bond if no repairs or replacements are needed. Upon notification by the arborist that repairs or replacements are to be made, the owner or his agent shall make the required repairs and replacements and shall notify the arborist when the repairs and replacements are complete. The arborist shall inspect the repairs and replacement and shall notify the owner when it is determined that the required repairs and replacements have been adequately performed. One-half (½) of the bond shall then be refunded.

The remaining one-half (½) of the bond shall be held for a period of two (2) years from the date of the arborist's notification to the owner that the required repairs or replacement have been completed. The purpose of retaining this portion of the bond is to insure that trees which are damaged by construction, but where the injury becomes apparent only after construction is completed, will be repaired or replaced. At the end of this two-year period, the owner or his agent may apply to the city arborist in writing for a discharge of the unexpended or unobligated portion of such bond. If the protected trees have survived in good health based upon the guidelines set out in the Handbook in the section entitled "Tree Preservation and Protection" the arborist shall release the bond within thirty (30) days of receipt of the application. The bond shall not be discharged until all required repairs and replacements have been made.

If the owner or his agent refuses to comply with the requirements of the arborist as made pursuant to section 35-15(b), the city may, at its option, have the work performed by others or by its own forces. In either case, all costs incurred by the city shall be reimbursed from the bond or other funds being held. In the event the owner or his agent has during the two-year period, sold all or a portion of the real estate subject to the agreement, the original owner or his agent shall continue to be responsible for all measures required by the agreement and for all trees in open space including those located in common areas and on individual fee-simple lots. The original owner or his agent or the purchaser as the case may be shall take the measures, and repair or replace trees as required by the arborist. If the new owner of a single-family residential property refuses to permit the original owner or the arborist to make the required protective measures, inspections, repairs, or replacements, the original owner shall be considered as having complied with this section.

(Ord. No.811; Ord. No.953; Ord. No.1042, 3-28-83; Ord. No.1236, 9-13-88)

CITY OF FALLS CHURCH, VIRGINIA
NEW LANDSCAPE ELEMENTS BOND AGREEMENT AND PLAN

BOND AGREEMENT: In return for the approval of the development plans for

(Development Name)

Developer and/or Contractor of _____, does hereby agree to
(Developer's and/or Contractor's Name)

perform all required work as required by the Landscape Plan by _____ and the Falls Church City Code, Chapter 38. To ensure that this work is performed, a bond in the amount of _____ shall be posted prior to the approval of the required permits. The bond is to be held in escrow by the City according to the terms of the City Code, Section 38-29, and until the conditions stated in Chapter 38-29 are completed (See narrative and details of Plan). If the Developer and/or Contractor fail or refuse to comply with the terms of this Agreement and the City brings suit against either or both to enforce said terms, the Developer and/or Contractor shall be jointly and severally liable to the City for reasonable attorney's fees, not to exceed twenty percent (20%) of the principal amount claimed, plus its costs incurred.

(Developer's and/or Contractor's Name)

(Date)

(City of Falls Church)

(Date)

Example–New Landscape Bond Estimate

Quantity	Key	Common/Botanical Name	Size	Comments	Unit Cost	Total
4	AL	Allegheny serviceberry <i>Amelanchier laevis</i>	2" caliper	B&B/single stem	\$100.00	\$400.00
4	CCR	Eastern redbud <i>Cercis canadensis</i>	2" caliper	B&B	\$150.00	\$600.00
6	IO	American holly <i>Ilex opaca</i>	6' minimum	B&B/fully branched	\$150.00	\$600.00
4	VC	Koeranspice viburnum <i>Viburnum carlesii</i>	1 gal	B&B	\$25.00	\$100.00
30	RFG	Black-eyed Susan <i>Rudbeckia fulgida</i>	1 gal	Container	\$5.00	\$150.00
10	LMB	Big Blue Lilyturf <i>Liriope muscari "Big Blue"</i>		4" peat pot	\$2.00	\$20.00

TOTAL WHOLESALE COST = \$1,870.00
REPLACEMENT COSTS X 2.5 + 4,675.00

TOTAL NEW LANDSCAPE ELEMENT BOND \$6,545.00

Ordinance Pertaining to the Bonding of New Landscaping Plant Material

§ 38-29 FALLS CHURCH CITY CODE

Sec. 38-29. Site Plans

(j) Bonds.

(1) Bond for public improvements.

- a. Prior to the issuance of building or development permits there shall be executed by the owner or developer an agreement to construct required physical improvements located within public rights-of-way or easement connected to any public facility, together with a bond with surety or condition acceptable to the city in the amount of the estimated cost of the required physical improvement as determined by the director of public works.
- b. The aforesaid agreement and bond or condition shall be provided to insure completion of all work thereby within the time to be determined by the director of public works, which time may be extended by the city manager upon written application by the owner or developer, signed, by all parties (including sureties) to the original agreement. The adequacy, conditions and acceptabilities of any bond hereunder shall be determined by the city manager. In any case where the city manager has rejected any such agreement or bond, the owner or developer shall have the right to have such determination made by the city council, provided the owner or developer has paid to the city a fee for the examination and approval of site plans and inspection of all required improvements shown on such plans. Such fee shall be determined by the city council as provided in paragraph (p) of this section.
- c. Upon satisfactory completion of the installation of the required improvements, the owner shall receive a certificate of approval from the public works department upon application for such certificate. Such certificate of approval will authorize the release of any bond which may have been furnished for the guarantee of satisfactory installation of such improvements or parts thereof, provided that the as-built site plan required by section 38-29(l) has been approved.

(2) Bond for landscape elements. There shall be a bond to insure the planting and maintenance of all plants and trees shown on the plan for landscaping. Prior to the issuance of building or development permits, the owner or his agent shall deposit a cash bond in an interest bearing escrow account upon which the city may draw under the conditions set out below in an amount equal to the total replacement cost of all newly installed plants and trees. Deposit of such funds shall be in a qualified security or insured savings account and any interest earned shall be credited to the owner or his agent.

- a. *Time, amount of bond fixed and standard for fixing amount.* The replacement cost of the plants and trees shall be fixed as of the time the approved plan for landscaping is released by the city staff and shall be based upon the most current "Guide for Establishing Values of Trees and Other Plants" prepared by the Council of Tree and Landscape Appraisers.
- b. *Other forms of security allowed.* In the event the amount of the bond is fixed in excess of two thousand dollars (\$2,000.00), a surety bond, letter of credit, certified check or other similar forms may be provided in lieu of cash bond for the amount in excess of two thousand dollars (\$2,000.00) if the particular form is approved by the city attorney.

- c. *Procedure for administration of bond and term of bond.* The owner or his agent shall notify the city arborist three (3) days prior to the installation of the plants and trees shown on the plan for landscape. The arborist shall inspect the plant and tree material and the method of installation. The arborist shall have the authority to require that healthy stock be planted and that the installation be done in a manner permitted by the most recent edition of "American Standard for Nursery Stock" published by the American Association of Nurserymen. The arborist shall certify in writing when the installation of all new plants and trees shown on the plan for landscaping has been completed in an acceptable manner, based on the standards above. The bond for the site may be apportioned if the property is being developed in phases or discrete parts. The term of the bond shall be one year from the date on which the arborist certified that installation was complete. The arborist shall inspect the site during the one year period and, if the plants or trees are not in good health, the arborist may require corrective measures or replacement, if the plant or tree cannot be saved. At the end of the one year period, the owner may apply to the arborist for a discharge of the unobligated or unexpended portion of the bond. Prior to such discharge the arborist shall make a final inspection and shall require the replacement of any plants or trees not in good health based upon the standards set out in the "American Standard for Nursery Stock." The unobligated or unexpended portion of the bond shall be discharged upon the arborist's certification that the replacement has been made.
- d. *Responsibilities of the owner.* If the owner or his agent refuses to comply with the requirements of the arborist, the city may at its option, have the work performed by others or by its own forces. In either case all costs incurred by the city shall be reimbursed from the bond or other funds being held. In the event the owner or his agent has sold all or a portion of the real estate subject to the approved site plan, the original owner or his agent shall continue to be responsible for plants and trees located in common areas and on individual fee-simple lots. If the new owner of a single-family residential property refuses to permit the original owner or the arborist to make the required inspection, repairs or replacements, the original owner shall be considered as having complied with this section.
- e. In addition to the requirements in subsection a. through d. above, a tree preservation and maintenance agreement and bond shall also be required if the site plan shows any existing trees which are to be protected, in accordance with section 35-15 of the City Code, prior to the issuance of building or development permits.

CITY OF FALLS CHURCH PLANNING DIVISION

INSTRUCTIONS FOR SUBMISSION OF LETTER OF CREDIT

Attached is a copy of the Irrevocable Letter of Credit form that is acceptable to the City of Falls Church. The Letter of Credit is used to ensure funds for the existing tree preservation measures and/or new landscaping in the event the developer fails to install or maintain the required improvements and/or measures within the agreed time frame.

PLEASE FOLLOW THE INSTRUCTIONS LISTED BELOW EXACTLY TO ENSURE TIMELY PROCESSING OF YOUR LETTER OF CREDIT.

- * The financial institution issuing the Letter of Credit must use the form provided, DO NOT MAKE ANY CHANGES.
- * The Letter of Credit must be signed by an officer that is duly authorized to issue Letters of Credit on the financial institution's behalf.
- * The financial institution used must have a branch authorized to do business in the Commonwealth of Virginia.
- * The date on the Letter of Credit must be a date AFTER that on which the Standard Agreement is executed by the City of Falls Church.
- * The initial expiration date for the Letter of Credit must be at least twelve (12) months AFTER the Standard Agreement completion date.
- * Return all documentation to the Planning Division for processing.

Name of Bank _____

Address _____

Date _____

IRREVOCABLE LETTER OF CREDIT NO. _____

Falls Church City Council

c/o City Arborist

Planning Division

300 Park Avenue

Falls Church, VA 22046

Ladies and Gentlemen:

We hereby authorize you to draw on us for the account of

(Developer's Name and Address)

up to an aggregate amount of US Dollars \$_____

(Amount)

available by your drafts at sight accompanied by certification of the City Arborist that the developer failed to complete installation in accordance with a plan known as

_____ or otherwise failed to

(Plan Name and Number)

perform in accordance with an Agreement dated _____

between _____ and the City.

(Developer's Name)

This letter is irrevocable and unconditional.

We hereby further agree that:

(a) drafts drawn under and in compliance with the terms of this Letter of Credit will be duly honored if presented at our offices at _____

(Bank's Name and Address)

on or before _____. (This date at least twelve months after Standard Agreement expiration date).

- (b) it is a condition of this Letter of Credit that it will be automatically renewed for successive six month terms from the present or future expiration date hereof until cancelled, in writing, by the City; unless ninety days prior to such date we notify you, in writing by registered mail, that we elect not to renew this Letter of Credit for an additional term.
- (c) upon receipt by you of such notice, you may draw hereunder by means of your drafts on us, at sight accompanied by your written certification that you have not released liability under the aforesaid bond or undertaking, and the proceeds of your draft will be used by you to meet eventual payments under your bond or until your undertaking is satisfied. You will refund to us the amount paid, less any amounts which may have been paid by you in the meantime under this bond or undertaking.
- (d) except so far as otherwise expressly stated, this Credit is subject to the Uniform Customs and Practice for Documentary Credits (1974 Revision), International Chamber of Commerce Publication No. 290. The amount of any draft drawn hereunder must be endorsed on the reverse side hereof. All drafts must be marked "Drawn under

(Bank's Name)

Letter of Credit _____.

(Number and date as above)

(Bank Name)

BY: _____

(Type Name and Title)

ACKNOWLEDGEMENT

STATE OF _____:

COUNTY OF _____: to wit:

The foregoing instrument was acknowledged before me this

_____ day of _____, _____, by _____
(Name of Person)

[personally appeared before me, ☐ who is known to me, ☐ whose identity I proved on the basis of _____, ☐ whose identity I proved on the oath/affirmation of _____, a creditable witness, to be the signer of the above instrument, and he/she acknowledged that he/she signed it.]

Title

Notary Public

My commission expires: _____

THREE-PARTY ESCROW AGREEMENT

THIS AGREEMENT, made this _____ day of _____, by and between _____, hereinafter called Developer, party of the first part, and the City of Falls Church, Virginia, hereinafter called City, party of the second part, and _____ hereinafter called Agent, party of the third part:

WITNESSETH:

WHEREAS, the Developer desires approval of plans for _____, which plans include provision for public improvements/erosion and sediment control measures, as described in the attached Agreement or Estimate of Quantities, as required by the Subdivision or Site Plan Ordinances, or the City Code; and

WHEREAS, The City desires to ensure the installation, maintenance, and adequate performance of such improvements/measures,

NOW, THEREFORE, for and in consideration of the foregoing premises and the following terms and conditions, and in further consideration of the approval of the aforesaid plans by the City and the issuance of permits for the work proposed to be done thereunder, the parties hereto agree as follows:

1. Developer has deposited with Agent, and Agent by this execution hereof acknowledges that he holds, the sum of \$ _____ in escrow under and subject to the terms of this agreement.
2. If said improvements/measures are not performed in accordance with the approved plans or approved revision thereof, City shall reserve the right to enter upon Developer's property to construct such measures or do other work as may be deemed necessary by the City for compliance, after first informing the Developer in writing of its intent to do so.
3. In the event City performs or programs work of any nature, including labor, use of equipment, materials, and overhead, or causes same to be performed by others under the provisions of paragraph 2 above, either by force account or contract, Agent shall disburse to City upon its order, within five (5) days of receipt of written demand thereof, such sum or sums as required, provided, however, that Agent's liability so to disburse shall be limited to the undistributed balance of the escrow amount in its hands. A copy of such demand shall be delivered or mailed by City to Developer.
4. In the event Agent makes disbursement pursuant hereto, Developer agrees to deposit within ten (10) days of such disbursement, an amount sufficient to restore escrow amount to its original balance.
5. It is expressly agreed by the parties hereto that this obligation shall remain in effect and the escrow amount shall be held by Agent until released by the City.
6. If the Developer and the Agent fail or refuse to comply with the terms of this agreement and the City brings suit against either or both to enforce said terms, the Developer and the Agent shall be jointly and severally liable to the City for reasonable attorney's fees, not to exceed twenty percent (20%) of the principle amount claimed, plus its cost incurred.
7. The City reserves unto itself all other rights and remedies which it has or may have under law.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be executed on their behalf.

Developer

Address

BY: _____ (Seal)

Name & Title

COMMONWEALTH OF VIRGINIA)
) SS:
COUNTY OF FAIRFAX)

Subscribed and sworn to before me this _____ day of _____, _____

by _____

My commission expires

Notary Public

(SEAL)

CITY OF FALLS CHURCH

Witness or

Attest: _____ By: _____

ITS _____

AGENT

Witness or Attest: _____

(SEAL)

Details and Specifications

Applicant Action: 1. Details to be Included on Plan.



CITY
OF
**FALLS
CHURCH**

CITY OF FALLS CHURCH, VIRGINIA PLANNING DIVISION
TREE PRESERVATION PROCEDURES AND SPECIFICATIONS

1. Prior to allowing any vehicle or construction equipment to enter the site, the construction foreman and project arborist (also foreman of company doing actual tree work if different from project arborist) is to meet the City Arborist to mark the location of the limits of clearing/tree preservation fencing, erosion control fabric, and root pruning line (where required), access routes, storage areas, and parking areas. The location of the LIMITS OF CLEARING/TREE PRESERVATION FENCING is to be installed in accordance with the approved plan and field located from existing benchmarks, landmarks, and building stakeout survey markers. All work procedures and tree preservation measures are to be discussed at this time. An appointment must be made with the City Arborist a minimum of three (3) days prior to the establishment of the tree preservation measures as required by City Code (Sec. 35-15 (b), see enclosed. Phone the City Arborist for an appointment at 703-248-5183.
2. Trees to be removed shall be clearly marked and approved by the City Arborist prior to demolition or entry of any equipment on site. A tree contractor licensed and bonded to work in the City shall perform all tree work, including all tree removals. Check with the City Arborist for a copy of the most recent list of Tree Contractors.
3. Tree preservation fencing shall be either of the following:
 - a. Six (6) foot high chain link fence sections attached to one and five eighths (1 5/8) inch outside diameter pipe with eleven (11) -gauge mesh in a two (2) inch diamond pattern. The fencing noted above may be temporary panels set in concrete blocks at the base and secured at the top with saddle clamps
 - or
 - b. Four (4) foot high fourteen (14) gauge welded wire fence supported by six (6) foot long metal stakes (2" width) to be spaced eight (8) feet on center and sunk into the ground.

Both of the fencing types noted above shall be flagged with brightly colored surveyor ribbon to improve their visibility.

The contractor must maintain fencing in place throughout construction. **In the event fencing must be temporarily removed for any reason, contact must be made first with the City Arborist at 703-248-5183.** The City Arborist must grant approval before any tree preservation fencing is removed, even temporarily.

4. Erosion and sediment control fencing shall be placed on the inside (toward construction) from the tree preservation fencing and any root-pruning trenches.

Erosion control devices such as silt fencing, debris basins, and water diversion structures shall be installed to prevent siltation and/or erosion within the tree protection zone.

Property owners are advised to impose fines in contracts with construction companies if tree preservation measures are violated.
5. Demolition and Site Clearing:
 - a. The City Arborist shall be notified a minimum of three (3) days in advance of commencing any form of tree work. Call 703-248-5183 for an appointment.

- b. Trees to be removed shall be felled so as to fall away from tree protection zones and to avoid pulling/breaking of roots of trees to remain. If roots are entwined, the consultant may require first severing the major woody root mass before extracting the trees. This may be accomplished by cutting through the roots by hand, with a vibrating knife, rock saw, and narrow trencher with sharp blades, or other approved root-pruning equipment.
- c. Trees being cut within the tree preservation zone shall be cut near ground level and the stumps ground out with a walk-behind grinding machine.
- d. All downed brush and trees shall be removed from the tree protection zone either by hand or with equipment sitting outside the tree protection zone. Extraction shall occur by lifting the material out, not by skidding it across the ground.
- e. Brush shall be chipped and placed in the tree protection zone to a depth of six (6) inches, with no chips against the trunks of trees.
- f. Structures and underground features to be removed within the tree protection zone shall use the smallest equipment possible and operate from outside the tree protection zone. The City Arborist shall be present during all such operations within the tree protection zone to monitor demolition activity. Phone 703-248-5183 at least three (3) days in advance for an appointment.
- g. Any damage to trees due to demolition activities shall be reported to the City Arborist within six (6) hours so that prompt remedial action can be taken.
- h. If temporary haul or access roads must pass over the root area of trees to be retained, a roadbed of at least 10 inches of mulch shall be created to protect the soil. The roadbed material shall be replenished as necessary to maintain a 10-inch depth. The City Arborist must approve the use of any such temporary road in the tree protection area.

6. Pruning & Other Preservation Measures Specifications:

- a. The City Arborist shall be notified a minimum of three (3) days in advance of commencing any form of tree work. Call 703-248-5183 for an appointment.
- b. Root pruning, where required, shall be mechanically done with a narrow trencher with sharp blades. Once a trench is opened up, approximately 18-24" in depth and 4" wide, all exposed roots will be hand pruned so that the clean-cut ends can regrow.
 - The tree preservation fencing shall be placed 6-12" outside the root-pruning trench (construction side of the trench). The erosion and sediment fencing shall be placed outside the tree preservation fencing (construction side of the fence).
 - Where required, apply a slow-release complete fertilizer containing major and trace elements, but low in water-soluble nitrogen during the season before the commencement of construction. An application of a mycorrhizae product may also be required to assist in the preservation of highly stressed trees.
- c. All trees to be saved will be pruned in accordance with American National Standards Institute (ANSI) Standard Practices for Trees, Shrubs, and Other Woody Plant Maintenance ANSI A300 and adhere to the most recent edition of ANSI Z133.1.
- d. Treat any disease or insect pest as required to reduce stress on trees.
- e. Remove all invasive vines growing on trees and from the area around the trees.

- f. Specifications for work to be performed on individual trees shall be indicated under the "maintenance" column of the Tree Survey.
- g. All trees within the project area shall be pruned to:
- clear the crown of diseased, crossing, weak, and dead wood to a minimum size of 1 ½ inches diameter;
 - provide 14 feet of vertical clearance over streets and 8 feet over sidewalks;
 - remove stubs, cutting outside the woundwood tissue that has formed around the branch;
 - reduce end weight on heavy, horizontal branches selectively removing small diameter branches, no greater than 2 to 3 inches near the ends of the scaffolds.
- h. Where temporary clearance is needed for access, branches shall be tied back to hold them out of the clearance zone. The City Arborist must approve such tying.
- i. Pruning shall not be performed during periods of flight of adult boring insects because fresh wound attract pests. Pruning shall be performed only when the danger of infestation is past.
- j. All work must be performed by a tree contractor licensed and bonded to work in the City and in accordance with the direction of the project certified arborist and the City Arborist.
- k. Interior branches shall not be stripped out.
- l. Pruning cuts larger than 4 inches in diameter, except for dead wood, shall be avoided.
- m. Pruning cuts that expose heartwood shall be avoided whenever possible.
- n. No more than 20 percent of live foliage shall be removed with the trees.
- o. While in the tree, the arborist shall perform an aerial inspection to identify defects that require treatment. Any additional work needed shall be reported to the City Arborist.
- p. Brush shall be chipped and chips shall be spread underneath trees within the tree protection zone to a maximum depth of 6 inches, leaving the trunk and root flare clear of chips.
- q. It may also be necessary to fertilize, aerate and otherwise treat the "trees to be saved" as required by the City Arborist, following a meeting with the owner's/developer's arborist and approval of the Tree Preservation Plan. All tree work must be completed prior to construction.
- r. 'Selective clearing' in wooded areas will be allowed only under the direction of the City Arborist. Trees to be removed will be felled by hand so that minimal damage is done to "trees to be saved".
- s. No vehicles or storage of materials of any kind will be allowed inside the limits of clearing. No storage of material or debris will be allowed within the "tree save area". No burning will be allowed on site.

7. Construction Specifications:

- a. Supplemental water shall be supplied to trees being preserved when natural rainfall is less than 1" a week, from early spring until the ground freezes in the fall. Irrigation should be designed to wet the soil to a depth of 2-3 feet. Lacking a source of water early on the construction site, this may be accomplished by constructing a 6" berm around the tree protection zone and filling the basin with a water truck or by injecting the soil using a pressure system form of a truck mounted water tank. Shallow frequent watering should be avoided
- b. Have a licensed and bonded tree contractor remove torn, hazardous, or prominent deadwood as it occurs, using ANSI standards noted under #4 above. .
- c. Where construction traffic must occur in the area of tree roots it shall be necessary to apply the following procedure: cover undisturbed soil with 10-15 inches wood chips and topped with chain link fence pulled taught and anchored or topped with 5/8 to 3/4 inch plywood with non-skid surface.
- d. Where compaction occurs during construction, vertical mulch with good quality compost.
- e. Before grading, pad preparation, or excavation for foundations, footings, walls, or trenching, relevant trees shall be root pruned 1 foot outside the tree protection zone by cutting all roots cleanly to a depth of 24 inches to the maximum depth of root penetration, (usually 3 feet). Roots shall be cut by manually digging a trench and cutting exposed roots with a saw, vibrating knife, rock saw, narrow trencher with sharp blades, or other approved root-pruning equipment. Pruned roots shall be promptly covered with soil.
- f. Any roots damaged during grading or construction shall be exposed to sound tissue and cut cleanly with a saw and promptly covered with moist soil.
- g. Spoil from trenches, basements or other excavations shall not be placed within the tree protection zone, either temporarily or permanently. Soil stockpiles should be placed only in previously designated areas. No vehicles or construction equipment shall be parked in the tree protection zone.
- h. No burn piles or debris pits shall be placed within the tree protection zone. No ashes, debris or garbage may be dumped or buried within the tree protection zone. No materials of any kind shall be stored in the tree protection zone.
- i. Maintain fire-safe areas around fenced areas. Also, no heat sources, flames, ignition sources, or smoking is allowed near mulch of trees.
- j. A copy of the "approved plan" and TREE PRESERVATION PROCEDURES AND SPECIFICATIONS must be maintained on site at all times.
- k. All underground utilities and drain or irrigation lines shall be routed outside the tree protection zone. If lines must traverse the protection area, they shall be tunneled or bored under the tree(s), with the approval of the City Arborist.
- l. A licensed and bonded tree contractor must perform additional tree pruning required for clearance during construction under the direction of the City Arborist. Construction workers shall not be allowed to prune trees.
- m. Any herbicides placed under paving materials must be safe for use around trees and labeled for that use. Any pesticides used on site must be tree-safe and not easily transported by water.

- n. If injury should occur to any tree during construction, it should be treated as soon as possible under the direction of the City Arborist.
 - o. The City Arborist must monitor any grading, construction, demolition, or other work that is expected to encounter tree roots.
 - p. At the completion of construction (all equipment removed from site), notify the City Arborist for an inspection before removing the tree preservation fencing. At this time, all trees will be inspected and any repairs needed will be stipulated by the City and promptly made by the Contractor. Refer to Sec. 35-15(b) of the City Code for guidance on finalizing the requirements of the bond agreement.
8. The planting of the new tree(s) specified on the Plan shall take place after the completion of construction. The City Arborist must inspect the trees prior to planting (see Arborist Notification) and also inspect the placement and installation of the tree(s). All products and workmanship related to the planting of the tree(s) must be in accordance with the Tree Planting Specifications attached. The Contractor/Owner must present the City with a copy of a one-year guarantee from the landscape contractor for the newly planted tree(s). The tree will need to be thriving and in good condition one year from the date of planting or will need to be replaced.

If you have questions on any of the "procedures" or "specifications" noted above or concerns that may arise during construction, please contact the City Arborist at (703) 248-5183.

CITY OF FALLS CHURCH, VIRGINIA PLANNING DIVISION
PLANTING PROCEDURES AND SPECIFICATION

1. Contractor shall verify existing conditions and utility locations. The City Arborist, prior to the planting, must approve adjustments to locations of plant material due to field conditions. Any substitutions in plant material and sizes specified will not be accepted, unless approved by the City Arborist prior to installation.
2. All plant material shall conform the American Standard for Nursery, latest edition, published by the **American Nursery and Landscape Association**. All plants must be free from injury, insect infestations and disease. All plant material must be inspected by the City Arborist prior to planting. The Contractor shall phone 703-248-5183 at least three (3) days prior to installation for inspection of the material and for inspection of the planting operation.
3. All plant material must bear original nursery tags indicating the genus, species and if applicable, cultivars and variety.
4. Test soil drainage before planting. Dig a hole as deep as your planting hole and fill with water. If water drains at a rate less than one inch per hour, install drainage to carry water away from the planting hole base, or moving or raising the planting site (berm construction).
5. Examine soil for compaction before planting. If soils are compacted in an area where a group of plants are to be installed, incorporate several inches of a combination of organic materials such as composted yard waste, finely shredded pine bark mulch (*superfines*) or shredded, composted leaf mulch (*leaf-gro*) and till to a depth of twelve (12) to eighteen (18) inches over the entire area. Do not till if planting is within a tree preservation area. Apply the organic matter at a rate of one-quarter organic matter to three-quarters existing soil. Do not incorporate small quantities of sand - compaction will increase and drainage will decrease. For single tree plantings, backfill planting holes with unamended soil. Increase the width of the top of the planting hole in area where soil has been compacted. Do not incorporate organic matter such as peat moss into backfill for individual planting holes.
6. Tree pits shall be a minimum of two and one-half (2 1/2) times the width of the root ball and no deeper than the height of the root ball. On balled and burlaped trees, remove pinning nails or rope lacing, then cut away the wrapping and then backfill. Remove the top 12" of the wire basket. Remove all rope, whether jute or nylon, from trunks. For container materials, remove the container completely. Select trees grown in containers with vertical ribs or a copper-treatment on the interior wall. These container modifications and treatments minimize circling root formation. If roots are circling around the root ball exterior of container plants (trees, shrubs or perennials) cut through the roots and soil in a few places. Container tree with multiple circling roots will be rejected. Place shrubs and perennials at the same depth they were in the containers. For bare root perennials plant with the soil even with the top of the crown. Dig the hole wide enough to allow the roots to spread out in the soil. Push the soil back into the hole over the roots and around the top of the plant.
7. A soil test shall be made and the results submitted to the City Arborist prior to the installation of the plant material.

For trees: A slow-release granular fertilizer shall be incorporated into the top four (4) inches of backfill soil to provide nitrogen, or if a soil test indicated a need for phosphorus or potassium. Use no more than 1 lb. actual nitrogen per 1,000 ft. of planting hole surface. (Example - if using 18-6-12 with a 5' diameter hole, incorporate 0.3 oz. per planting hole.)

For shrubs: A slow-release granular fertilizer shall be incorporated into the top four (4) inches of backfill soil to provide nitrogen, or if a soil test indicates a need for phosphorus or potassium. Use quantities in accordance with manufacturer's direction.

For perennials, bulbs and annuals: A slow -release high phosphate fertilizer such as 7:40:6 or approved equal shall be incorporated into the top four (4) inches of the backfill mix. Alternatively, use Plant-tone on approved equal for sun perennials, together with rock phosphate at rates in accordance with manufacturer's directions. Alternatively, for shade perennials use Hollytone or approved equal, together with super phosphate at a rate in accordance with manufacturer's directions. Use gypsum, a soil conditioner, for clay soils. For bulbs, a commercial raw finely ground Bone Meal with an analysis of 4% nitrogen and 20 phosphorus acid shall be incorporated into the backfill mix.

8. When half of the backfill has been returned to the planting hole, water shall be applied to provide settlement and to eliminate air pockets. The tree shall be thoroughly watered again after the remaining soil has been placed in the planting pit. A three (3) to four (4) inch dam of soil shall be constructed around the planting pit.
9. Two (2) to three (3) inches of mulch shall be placed over the tree-planting pit, but shall be kept three (3) to four (4) inches away from the trunk of the tree or crowns of shrubs. Do not allow mulch to touch the trunks of trees or crowns of shrubs. Use mulch that is compatible with the type of plant used. Avoid mulch that has not been nitrogen composted, as the pH of the soil could change as the mulch degrades. Pine bark mulch will not change the pH of the soil as it degrades. This is the best type of mulch for use with perennials. In mulching perennials, use no more than 1-2". For Mediterranean type of perennials, such as lavender, or for peonies or iris, use no mulch at all.
10. Trees shall be planted at the height of the surrounding grade with root flares visible. Should soil have been piled over the root flare during the digging process, this soil shall be removed so that the flare is slightly above grade.
11. Any pruning must be done with the approval of the City Arborist. Pruning at the time of planting shall be done only to remove broken branches or double (co dominant) leaders.
12. Remove tags and labels from trees and shrubs to prevent girdling branches and trunks.
13. Stakes shall be used only in areas of high traffic or highly windy locations. A tree-staking diagram should be provided if staking is necessary. Stake for maximum of one year. Allow trees a slight amount of flex rather than holding them rigidly in place. Use guying or attaching that won't damage the bark. To prevent trunk girdling, remove all guying material after one year.
14. Use tree wrap only on thin barked trees planted in spring or summer into hot or paved areas. In these instances use white wrap, attaching without the use of wire, rope, ties or tape, and remove after one year.
15. Planting Season - Planting shall be done only within the following dates:
 - a. Deciduous Trees - March 15 to May 30 or September 15 to December 15 (oaks and black gum to be spring dug and planted only).
 - b. Evergreen Trees - March 1 to May 15 or September 15 to November 15.
16. All plant material shall be guaranteed by the Contractor for one year from the date of acceptance to be in good, healthy and flourishing condition. In the event that a plant dies, or in the judgment of the City Arborist, fails to flourish; the Contractor shall replace in accordance with the above noted specifications.
17. The Contractor shall be responsible for the maintenance of the plants during this one-year warranty period. This maintenance shall include providing water on a weekly basis when natural rainfall is less than one inch a week. Drip irrigation systems and water reservoir devices can facilitate watering. In planting beds (i.e., trees, shrubs and perennials), water slowly and deeply putting down 1"-2" of water in a 6-12 hour period.

**THE CITY OF FALLS CHURCH, VIRGINIA PLANNING DIVISION
LANDSCAPE MAINTENANCE GUIDELINES**

The following are general guidelines to be used in addition to regular care by maintenance professionals.

SOIL TESTS

Perform soil tests each spring prior to fertilization and mulching. Amend soil as directed by soil test results to correct deficiencies. Include organic matter content and soluble salts in the items tested by the laboratory.

TREES

FERTILIZATION and MULCHING- Two (2) years after installation, apply a slow - release fertilizer in accordance with manufacturer's recommendations (fall application). Fertilize shall be watered in when applied or timed with appropriate rainfall. Maintain a two (2) to three (3) inch layer of pine bark or nitrogen-composted shredded hardwood bark mulch to the drip line of each tree. Mulch is to be kept three (3) inches away from the trunk of the tree and is not to be applied in excess of three (3) inches. "Volcano" mulching interferes with the ability of the tree root to uptake water and nutrients and contributes to girdling roots. Artificially colored mulch shall not be used.

PRUNING - Two (2) years after installation, prune trees in accordance with the International Society of Arboriculture (ISA) guidelines for "Structure Pruning of Young Trees". Mature trees shall be pruned in accordance with ISA standards only. Specifically, "topping", "lion tailing" or excessively raising shall not be allowed. Species characteristics such as thin bark (maples, beech, etc.) shall be pruned in the dormant season. Elms and oaks shall not be pruned between the dates of April - June due to the active transmitting of Dutch elm disease and oak wilt.

DISEASE/PEAT CONTROL - Trees shall be inspected every other year by an ISA Certified Arborist for signs/symptoms of pests or diseases.

SHRUBS

FERTILIZATION and MULCHING - One (1) year after installation, in spring, remove old mulch and apply one (1) to two (2) inches of compost (BIO-COM, LEAF-GROW or approved equal) throughout the planting bed. Add two (2) inches of pine bark mulch or nitrogen composed hardwood bark mulch. Shrubs should be fertilized when they lack color and/or are not growing properly. Fertilizer needs shall be based on a soil test results and cultural practices shall be utilized firstly. Avoid excessive use of mulch or repeated application of hardwood bark mulches, which can cause the accumulation of toxic manganese levels in the soil and nutrient deficiency symptoms in the shrubs.

PRUNING - Prune dead or broken branches from all shrubs to retain natural forms depending upon species of shrub. Formal hedges shall be tapered so that the top of the hedge is narrower than the base of the hedge to allow for sunlight to reach all of the plant so that the lower branches of the plant will not die off. Generally, prune shrubs in accordance with timing of their flowering and with specific requirements of the plant. *Spring flowering shrubs*—prune following flower prior to bud set, *summer flowering shrubs*—in early spring, *evergreen shrubs*—in fall, winter or early spring. Roses should be pruned in early March.

GRASSES

Cut ornamental/native grasses to the ground February - early March of each year. Fertilize as required based on soil test with one (1) inch compost (See shrubs above). Turf shall be mowed with the appropriate equipment utilizing sharp blades. No more than one-third of the grass height shall be removed in any one mowing operation. Apply lime and fertilizer based on results of a soil test only. In drought years turf grass will recover when allowed to go dormant during low rainfall. In setting a budget for irrigation, priority should be given to trees and other valuable plant materials. In edging beds set into turf grass, take care to not edge so deeply that the roots of trees or shrubs are damaged. In mowing operations, mowing equipment shall not cause damage to trunks of trees.

PERENNIAL, VINES & OTHER GROUND COVERS

Cut perennials to the ground in February - early March of each year. Fertilize mature perennials as required based on color, vigor and soil test. Newly planted perennials benefit from fertilization with one half (1/2) to one (1) inch compost (See shrubs above) or with a 50% organic complete fertilizer at the rate of 2-3lbs per 100 sq.ft. during the first 2-3 years following establishment. During this time apply one (1) inch of pine bark (fines) mulch only. Over mulching can destroy otherwise healthy perennials. For Mediterranean type perennials, such as lavender, do not apply mulch at all. Perennials should be divided when the center of the plant begins to die out or when the plants display less vigor or flowering.

WATERING

Following the establishment period the first year when plants are watered on a weekly basis, provide supplemental watering during droughts when rainfall does not exceed one (1) inch per week. In drought years be aware that trees and shrubs that have been established less than six (6) years do not have fully developed root systems and shall be given priority in receiving supplemental water. Watering shall be slow, deep and infrequent at no more than 7-10 day intervals.

BULBS

After flowering, cut spent flower heads. Allow leaves of daffodils and hyacinths to remain for a minimum of six (6) weeks after flowers have faded. Cut off at base. Allow leaves of other bulbs to yellow naturally and then cut off at the base.

WEED CONTROL

Plant material that is found to be highly invasive and is detrimental to the local ecosystem, shall be removed from the property promptly upon identification. This is due to a high seed production rate that establishes the tree/perennial/vine successfully and quickly in the environment, they are able to out compete native species through rapid growth and high reproduction/distribution. There is a high cost of removal and an extremely difficult effort to manage invasive plant material.

LAWNS

Non-Chemical Alternatives to Herbicides - Bunchgrasses can be controlled effectively by digging. Using a spade or shovel, cut around clumps of weed grasses. The cut should be outside of all plant parts and at least two (2) inches deep. When digging small patches of creeping-type grasses, the outside edge should be 6 - 12 inches outside plant parts and at least six (6) inches deep.

Chemical- Pre-emergent and post emergent herbicides should be used as sparingly as possible and timed in accordance with the manufacturer's directions for the most effective treatment. Sterilants should be avoided. All chemical applications shall be performed under the supervision of a VA Certified Pesticide Applicator.

PLANTING BEDS

All beds shall be weeded at a minimum of three times a year and beds shall be maintained at an appropriate level of acceptance for presence of weeds. Weeds shall be removed prior to seed formation and pre-emergent and post-emergent herbicides may be used where applicable and only in accordance with the product's label.

INSECT AND DISEASE CONTROL

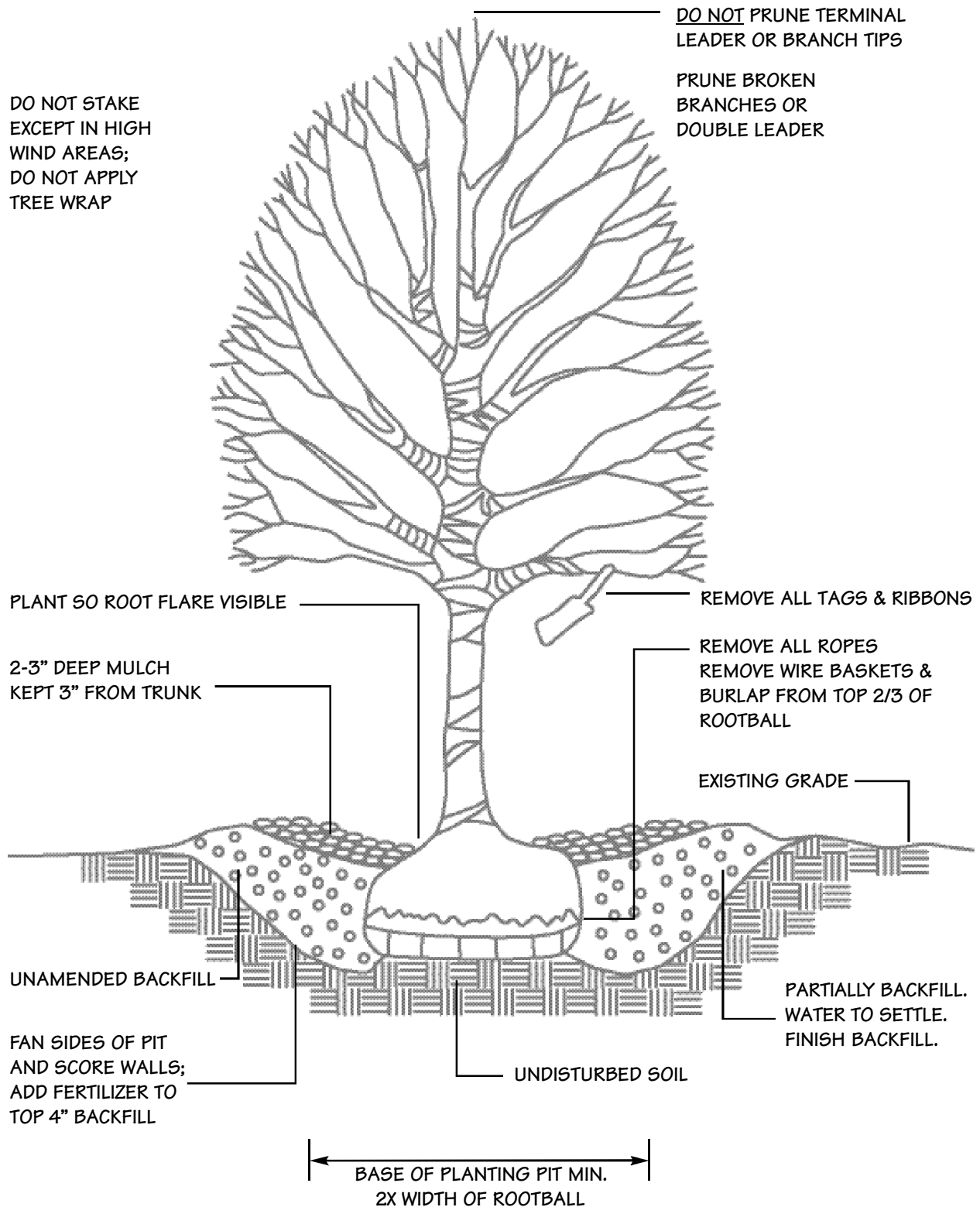
Personnel trained to identify plant damaging insect activity, plant pathogenic diseases, and potential cultural problems should be monitored at the site on a regular basis. For plant damaging insects and mites the contractor should follow recommendations in the most current edition of the VA Cooperative Extension publications on insect and disease control on landscape plants. Plant pathogenic disease problems identified by the contractor that can be resolved by pruning or the physical removal of damaged plant parts should be performed as part of the landscape contract. Plant pathogenic disease that can be resolved through properly timed applications of fungicides should be made with the authorization of the owner and as arrangement allows, at additional costs. Insect or disease prone plant species should be replaced with a more pest resistant species that is consistent with the intent of the landscape design. Required plant material shall be maintained for the life of the project in compliance with the approved site plan. Dead or diseased plant material shall be removed or treated promptly by the property owner and replaced in the next growing season. All pesticide applications shall be a VA Certified Pesticide Applicator.

ARBORIST NOTIFICATION:

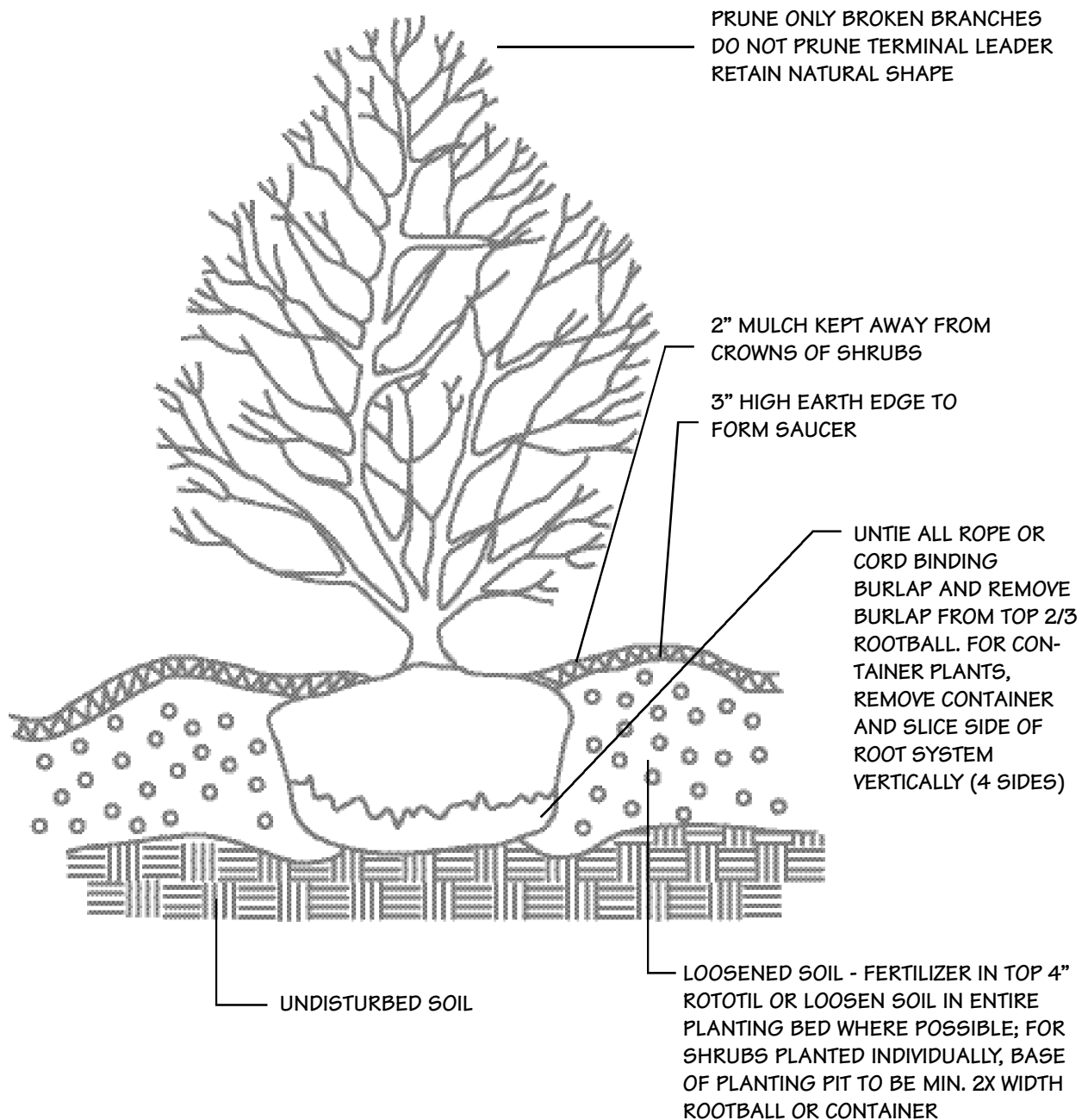
THE CITY OF FALLS CHURCH ARBORIST MUST BE NOTIFIED A MINIMUM OF THREE (3) DAYS PRIOR TO REMOVAL, PRUNING, OR PLANTING OF ANY TREES OR PLANT MATERIAL. THE PROPOSED PLANT MATERIAL IS TO BE INSPECTED PRIOR TO PLANTING BY THE CITY ARBORIST AND PROJECT'S LANDSCAPE ARCHITECT. PLANT MATERIAL NOT INSPECTED WILL BE REJECTED. TO ARRANGE AN APPOINTMENT CALL (703) 248-5183.

NOTE: The general contractor is responsible for stockpiling all topsoil acquired in any site excavation of hardscape features such as walks, curbs, etc. Finish grading around these curbs; walks and plant beds at building foundations will be brought to within .1 of one foot of the grades shown on the civil engineering plan. The owner/landscape contractor is responsible for all finish grading within 0 - .1 of a foot site stabilization, and the final landscape installation.

Tree Planting Detail



Shrub Planting Detail

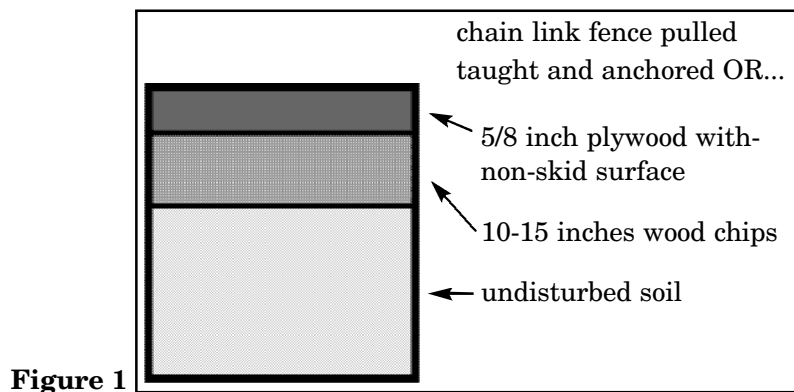


Tree Preservation Techniques

(Both techniques described below can be combined with the pruning of roots that may occur beyond the area of treatment.)

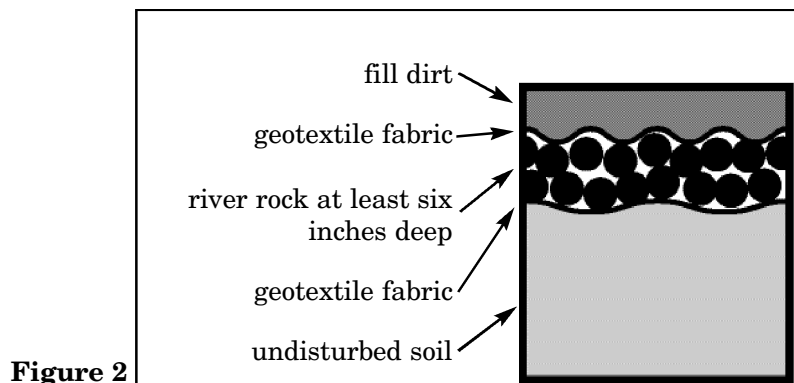
#1–For Use in Areas Where Equipment Must Operate in Areas That Will Remain at Existing Grade:

- In the woodchip and plywood or chain link fence area shown in Figure 1 below, spread 10-15" of wood chips by hand.
- On top of the wood chips, lay 5/8 to 3/4 inch plywood or heavy gauge chain link fence to provide a path for equipment and workers to operate.



#2–For Use in Areas Where Fill Soil Will Be Placed Over the Root Zone:

- An aeration system shall be installed in the area shown in Figure 2 below prior to grading. The aeration system (see diagram below) shall consist of *geotextile* fabric laid on top of the undisturbed ground; with not less than six inches of river rock on top of it; and with a second layer of *geotextile* fabric laid on top of the rock.
- Fill dirt can be placed on top of *geotextile* fabric.



Appendices



CITY
OF **FALLS**
CHURCH

Appendix A

Recommended Trees for Planting in Falls Church, VA

Canopy or Medium to Tall Growing Trees*

Common Name	Botanical Name	Moisture Needs	Exposure
American Beech	<i>Fagus grandifolia</i>	average	shade / full
Black Oak	<i>Quercus velutina</i>	dry	shade / part
Chestnut Oak	<i>Quercus prinus</i>	average to dry	shade / part
Common Hackberry	<i>Celtis occidentalis</i>	moist to average	shade / part
Northern Red Oak	<i>Quercus rubra</i>	average to dry	part / full
Persimmon	<i>Diospyros virginiana</i>	average dry	shade / full
Pin Oak	<i>Quercus palustris</i>	moist to average	shade / part
'Princeton' Elm	<i>Ulmus Americana 'Princeton'</i>	moist to dry	part / full
Red Maple	<i>Acer rubrum</i>	moist only	full
'Redmond' Linden	<i>Tilia americana 'Redmond'</i>	moist to dry	part
River Birch	<i>Betula nigra</i>	moist to average	full
Sassafras	<i>Sassafras albidum</i>	moist to average	part / full
Scarlet Oak	<i>Quercus coccinea</i>	dry	part / full
Sweet Birch	<i>Betula lenta</i>	average	part / full
Tulip Poplar	<i>Liriodendron tuipifera</i>	average	full
Tupelo or Black Gum	<i>Nyssa sylvatica</i>	moist to dry	part / full
White Oak	<i>Quercus alba</i>	average to dry	part / full
Willow Oak	<i>Quercus phellos</i>	moist to dry	part / full

* = Plant no closer than fifteen (15) feet from building.

Smaller or Understory Trees

Common Name	Botanical Name	Moisture Needs	Exposure
Alleghany Serviceberry	<i>Amelanchier laevis</i>	average to dry	part / full
American Fringetree	<i>Chionanthus virginicus</i>	moist to average	part / full
American Hornbeam	<i>Carpinus caroliniana</i>	moist to average	shade/ part
American Yellowwood	<i>Cladrastis kentukea</i>	moist to average	full
Canada Serviceberry	<i>Amelanchier canadensis</i>	moist to average	full
Common Silverbell	<i>Halesia tetraptera</i>	moist to average	part / full
Downy Serviceberry	<i>Amelanchier arborea</i>	average	part / full
Eastern Redbud	<i>Cercis canadensis</i>	average to dry	shade/ part
Hophornbeam	<i>Ostrya virginiana</i>	moist to average	shade/ part
Paw Paw	<i>Asimina triloba</i>	moist to average	shade / part
Red Buckeye	<i>Aesculus pavia</i>	moist to average	part / full
Sweetbay Magnolia	<i>Magnolia virginiana</i>	moist to dry	shade / part

Evergreen Trees

American Holly	<i>Ilex opaca</i>	moist to average	shade / full
Loblolly Pine	<i>Pinus taeda</i>	moist to average	full
Virginia Cedar	<i>Juniperus virginiana</i>	average to dry	full
Virginia Pine	<i>Pinus virginiana</i>	dry	full

Trees To Avoid

Common Name	Botanical Name	Common Name	Botanical Name
Blue Spruce	<i>Picea glauca</i>	Mimosa	<i>Albizia julibrissin</i>
'Bradford' or any ornamental pear	<i>Pyrus calleryana 'Bradford'</i>	Norway Maple	<i>Acer platanoides</i>
Canadian Hemlock	<i>Tsuga canadensis</i>	Russian Olive, Autumn Olive	<i>Eleagnus angustifolium, E. umbellata</i>
Cherry, edible and ornamental	<i>Prunus avium, P. cerasus</i>	Sawtooth Oak	<i>Quercus acutissima</i>
Empress or Princess tree	<i>Paulownia tomentosa</i>	Siberian Elm	<i>Ulmus pumila</i>
Flowering dogwood	<i>Cornus florida</i>	Silver Maple	<i>Acer saccharinum</i>
Hybrid Poplar	<i>Populus (hybrid)</i>	Tree-of-Heaven	<i>Ailanthus altissima</i>
Leyland Cypress	<i>Cupressocyparis leylandii</i>	White Mulberry	<i>Morus alba</i>
		White Pine	<i>Pinus strobus</i>

Appendix B

TREE CONTRACTORS LICENSED IN THE CITY OF FALLS CHURCH

1 July 2002 to 30 June 2003

This list is updated frequently, contact the City Arborist for the most recent copy.

Contractor	Address	Phone
AAA Tree Service, Inc.*	5512 Oakwood Road, Alexandria, VA 22030	703-255-7177
Arbor Artist, Inc.*	13370 Taylorstown Road, Leesburg, VA 20176	540-822-5611
Armstrong, Green & Embrey, Inc.*	2734 Gallows Road, Merrifield, VA 22116	703-239-0040
Audubon/VTM Arborists, Inc.*	3758 Farmland Drive, Fairfax, VA 22033	703-971-6258
B & W Excavating & Land Clearing Co.	15907 Lee Highway, Centreville, VA 20121	703-631-0505
The F. A. Bartlett Tree Expert Co.*	7823 LL Loisdale Road, Springfield, VA 22150	703-550-6900
Becker Landscaping & Tree Service*	10698 Moore Drive, Manassas, VA 20111	703-330-5204
Brennan's Tree Service, LLC*	218 Holden Drive, Manassas Park, VA 20111	703-292-8861
Capitol Tree Care, Inc.*	10910 Maple Street, Fairfax, VA 22030	703-359-6608
The Care of Trees*	22830 Quicksilver Drive, Dulles, VA 20166	703-661-8001
County Tree & Land, Inc.	PO Box 517, Great Falls, VA 22016	703-759-2687
Dad's Tree Service, Inc.	6257 Kerrydale Drive, Springfield, VA 22152	703-799-5844
The Davey Tree Expert Co.*	25255 Pleasant Valley Road, Chantilly, VA 22021	703-471-4018
Donegan's Tree Service*	23028 Evergreen Mills Road, Leesburg, VA 20175	703-327-6675
Flores Landscapes, Inc.	606 Jackson Street, Falls Church, VA 22046	703-536-6222
The Greenery, Inc.*	3215 Annandale Road, Falls Church, VA 22042	703-538-5117
Growing Earth Tree Care*	PO Box 450, Ashburn, VA 20146	703-818-8228
J L Tree Service, Inc.*	9940 Main Street, Suite 202, Fairfax, VA 22031	703-359-4444
Northern Virginia Tree Experts*	44199 Lavin Lane, Chantilly, VA 20152	703-471-7607
Ports Professional Tree Surgery, Inc.	4225 St. Jerome Drive, Annandale, VA 22003	703-323-7061
Quality Tree Care, Inc.*	Box 30413, Alexandria, VA 22310	703-273-6111
Richard's Tree Service*	7213 Poplar Drive, Annandale, VA 22003	703-354-3667
SavATree*	10105 Residency Road #203, Manassas, VA 20110	703-369-2500
TreesPlease*	PO Box 1025, Haymarket, VA 20168	703-927-2048
TW Tree Works	3111 Carroll Place, Falls Church, VA 22042	703-385-0663
Tysons Tree Service, Inc.*	PO Box 3025, Merrifield, VA 22116	703-849-9188
Wood Acres Tree Specialists*1	0315 Kensington Parkway, Kensington, MD 20895	301-949-4100
Yards Are Us, Inc.	7418 Brad Street, Falls Church, VA 22042	703-280-5357

NOTE: This list of Tree Contractors is compiled of those companies that have met the City's requirements that they hold a \$1,000 corporate surety bond. The City, therefore, is not recommending the work of any of the above companies. It does, however, wish to inform homeowners and developers that the City retains a file of complaints that have been received about contractors. These complaints and problem resolutions are on file with the City Arborist and are available for review.

Appendix C

Guidelines for the Placement of Trees and Woody Plants for Energy Conservation

The use of landscape materials to moderate effects of adverse climates is not a new concept, but is receiving considerable attention in view of the current emphasis on energy conservation. It has been estimated that the potential value of "low energy" landscapes can result in a 20-30% reduction in energy consumption and as high as 58-65% on very hot summer days. Investing in new plantings not only provides pleasure from an aesthetic sense, but will have direct benefits in reducing future energy consumption.

Landscaping can be used to effectively reduce the amount of energy used to cool residences and other buildings. The placement of trees and shrubs appropriately located to buildings can minimize the heat gain during the hottest months by:

- Blocking solar radiation from the building envelope, the adjacent ground and foundations.
- Creating cool micro climates near the building by evapotranspiration ; and
- Either channeling or blocking air flows through and around the residences.

This proximity planting provides optimal shading patterns and also uses solar radiation for evapotranspiration by the landscape plants thereby creating cool micro climates directly adjacent to walls and windows. The resulting reduction in ambient air temperatures and direct solar exposure reduces the rate of heat transfer through the walls and windows. A landscape plan design which maximizes this effect involves the use of a multi-layer canopy trees with dense shrubs underneath and immediately adjacent to the walls and windows.

Three size classifications have been used: small less than 25' (7.5m), medium - 25' - 40' (7.5m 12.2m), and large - over 40' (12.2m). Small trees are best used as patio trees or can be planted relatively close to the house to directly block morning and afternoon sun. Medium trees, because of their canopy and size, provide extensive shade on lawns and patios. Generally, medium trees should be planted 10 to 15 feet (3- 4.6m) away from the house. Large trees and those with wide spreading canopies should be restricted to perimeters of most residential lots.

Protection From the Sun

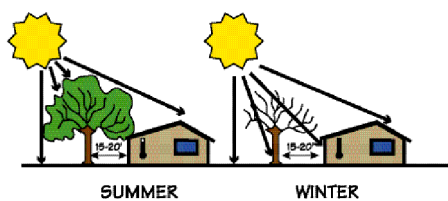


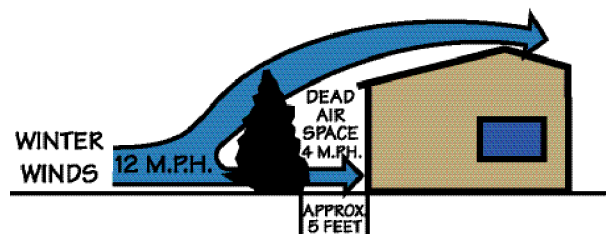
Figure 1. A deciduous tree on the south and west walls of a house will reduce indoor air temperature in summer and increase indoor air temperature in winter.

Trees. Trees can reduce summer temperatures significantly. Shading the roof of a house from the afternoon sun by large trees can reduce temperatures inside the home by as much as 8 to 10 degrees F. Deciduous trees (those that lose their leaves in winter) provide summer shade, then drop their leaves in the fall, which allows the warmth of the sun to filter through their bare branches in winter and help warm the home. If a home can be situated to take advantage of shade from existing trees on south and west exposures, energy expended to cool the house can be reduced considerable.

Trees and shrubs are oriented to provide maximum shading of windows and walls directly exposed to the solar angles during the hottest times of the day during the hottest months. In the northern Virginia area, this would typically be the 1 to 5 o'clock in the afternoon months of June through September.

Trees and shrubs may be placed in the following manner to provide the listed benefits:

- Shrubs and small trees planted on the south side of a building insulates the lower sections of the walls and the adjacent ground during long afternoons of August through September when solar angles are low.
- At least one (1) or more trees should be place fairly close to air conditioning units so that after a five (5) year period their canopies will provide shade to the unit from morning and afternoon solar exposure. Make sure that the lower branches and foliage will not block the air intakes of the air conditioning units.
- If a building will be air conditioned during most of the cooling season, low canopy trees and shrubs should be used to block prevailing winds. For, example, if summer winds are from the southeast, tall shrubs positioned on the south sides of the east windows can significantly reduce warm air infiltration through the windows. These same shrubs will provide shade for the adjacent walls and windows.



Contact your county extension agents, public libraries, local nurseries, landscape architects, landscape contractors on energy-efficient landscaping and regional plants and their maintenance requirements.